

**SERIAL NO. 10/650,397****PATENT  
Docket RAL919990139US2****Amendments to Claims:**

1-13. (canceled)

14. (Currently Amended) A computer system comprising:

a computer readable medium containing a plurality of data structures, for finding a match for a variable length search key, said data structure including:

a first pattern ~~that is to be matched~~;

a direct table ~~that~~ stores a first address location for a search tree;

a plurality of pattern search control blocks wherein each pattern search control block represents a branch in the search tree;

a plurality of leaves wherein each leaf is an address location for storing predefined information relative to said first pattern; and

a search tree engine to correlate the first pattern with information stored in selected ones of the plurality of data structures and forward the predefined information found in a leaf included in the selected ones of the plurality of data structure if a match occurs between the first pattern and a second pattern stored in said leaf wherein a format for the direct table includes at least one of the search control block including a next pattern address points to a next pattern search control block, a leaf control block address points to one of the plurality of leaves, a next bit or bits to test and a direct leaf.

**SERIAL NO. 10/650,397****PATENT  
Docket RAL919990139US2**

15. (Previously Presented) The computer readable medium containing a plurality of data structures for finding the match of claim 14 further comprising a lookup definition table that manages a tree search memory.
16. (Previously Presented) The computer readable medium containing a plurality of data structures for finding the match of claim 15 wherein the lookup definition table comprises entries that define a physical memory the tree resides in, a size of the key and leaf, and a type of search to be performed.
17. (Previously Presented) The computer readable medium containing a plurality of data structures for finding the match of claim 15 wherein the lookup definition table is implemented in a plurality of memories.
18. (Cancelled)
19. (Previously Presented) The computer readable medium containing a plurality of data structures for finding the match of claim 14 wherein a format for a pattern search control block includes at least one of a search control block; a next pattern address that point to a next pattern search control block; a leaf control block address that points to a leaf or result; and a next bit or bits to test.

**SERIAL NO. 10/650,397****PATENT  
Docket RAL919990139US2**

20. (Previously Presented) The computer readable medium containing a plurality of data structures for finding the match of claim 14 wherein a leaf data structure includes at least one of a leaf chaining pointer; a prefix length; a pattern to be compared to the search key; and variable user data.
21. (Previously Presented) The computer readable medium containing a plurality of data structures for finding the match of claim 18 wherein the direct leaf is stored directly in a direct table entry and includes a search control block and a pattern to be compared to a search key.
22. (Previously Presented) The computer readable medium containing a plurality of data structures for finding the match of claim 14 wherein a pattern search control block is inserted in the search tree at a position where the leaf patterns differ.
23. (Previously Presented) The computer readable medium containing a plurality of data structures for finding the match of claim 14 wherein a pattern search control block has a shape defined by a width of one and a height of one and is stored in a memory that has a line length of at least 36 bits.
- 24-45. (canceled)